

Equations (2) Expanding brackets

a)

$$3a + 2a + a$$

b)

$$5x - 2x$$

c)

$$6p + 3p - 7p$$

d)

$$3m - 8m$$

e)

$$3p \times 2$$

f)

$$18n \div 6$$

g)

$$3x + 2y + x + 4y$$

h)

$$5m + 4n + 2m - 3n$$

i)

$$2a - 3b - a - b$$

j)

$$2a^2 + 3a^2$$

k)

$$2a + 3b + 3a + 4b$$

l)

$$7x - 2y - 5x - 3y$$

m)

$$3x^2 + 2x + 4x^2 - 5x$$

n)

$$5s^2 + 3t - 4s^2 - 8t$$

o)

$$3ab - 2a - 5ba - a$$

j)

$$2(3x + 1) + 2(1 + 2x)$$

k)

$$5(2p - 3) + 3(2p - 1)$$

l)

$$3(2b - 1) - 5(4 - 3b)$$

Equations (2) Expanding brackets

Simplifying Expressions Answer Key

Increasingly
Difficult
Exercises

a)

$$6a$$

b)

$$3x$$

c)

$$2p$$

d)

$$-5m$$

e)

$$6p$$

f)

$$3n$$

g)

$$4x + 6y$$

h)

$$7m + n$$

i)

$$a - 4b$$

j)

$$5a^2$$

k)

$$5a + 7b$$

l)

$$2x - 5y$$

m)

$$7x^2 - 3x$$

n)

$$s^2 - 5t$$

o)

$$-2ab - 3a$$

p)

$$10x + 4$$

q)

$$16p - 18$$

r)

$$21b - 23$$

Brackets

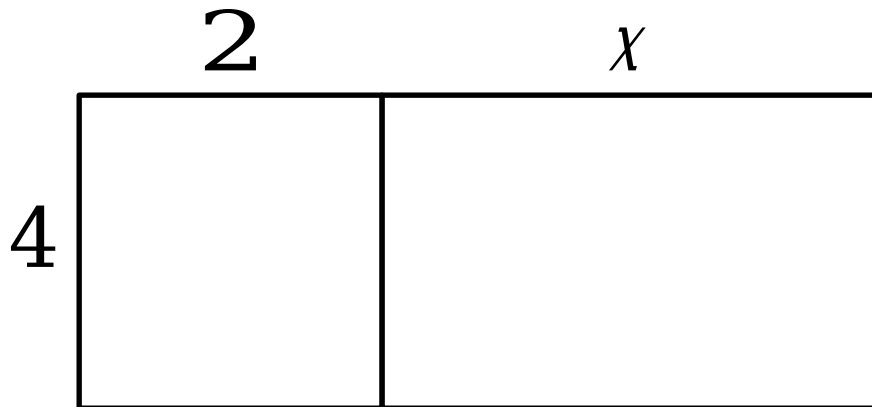
If I want “3 lots of ”, what will I have?

?

What’s another way I can write “3 lots of ”?

?

So we can multiply each thing inside the bracket by the thing outside it.



We can also see this using areas.

Area of wh

?

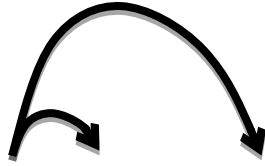
 e

Total area of

?

 rectangles

Starter



?

?

?

?

?

Dealing with negative sign

Click to
give hint >

$$-1(x - 3)$$

$$\begin{array}{l} ? \\ - \end{array} \begin{array}{|c|} \hline ? \\ \hline \end{array} \begin{array}{l} 3 \\ ? \end{array}$$

Expanding and Simplifying

If we have multiple brackets we can usually collect like terms after.



?



?



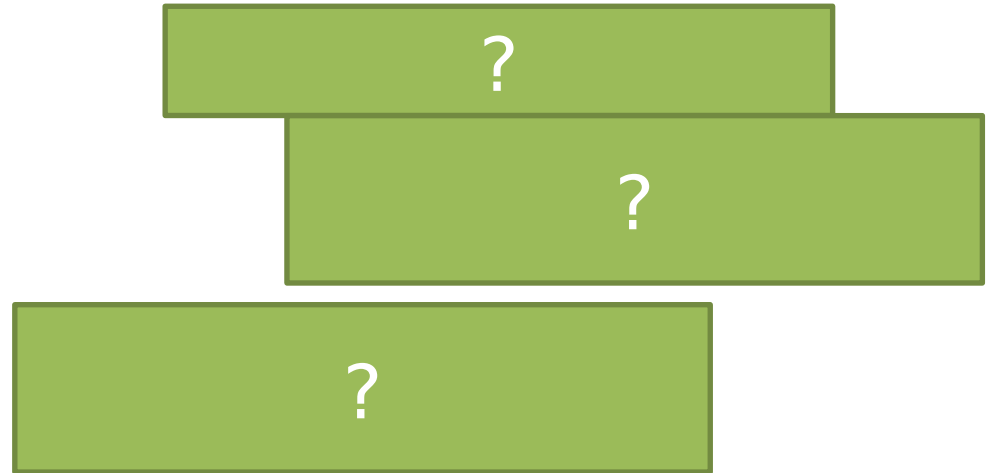
?



?

Test Your Understanding

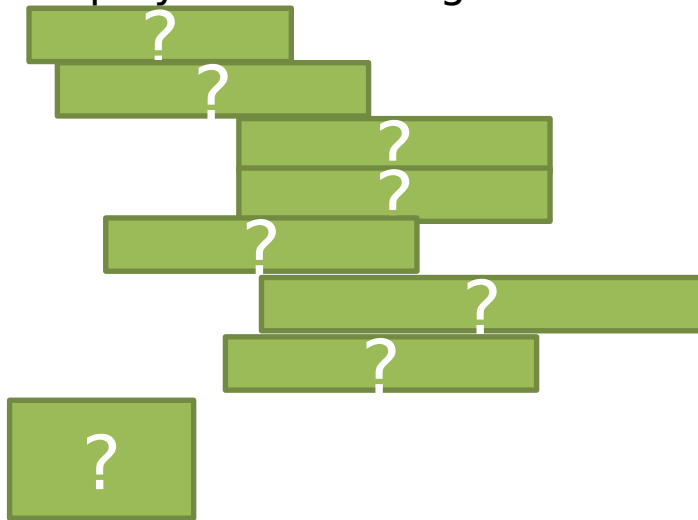
Expand and simplify.



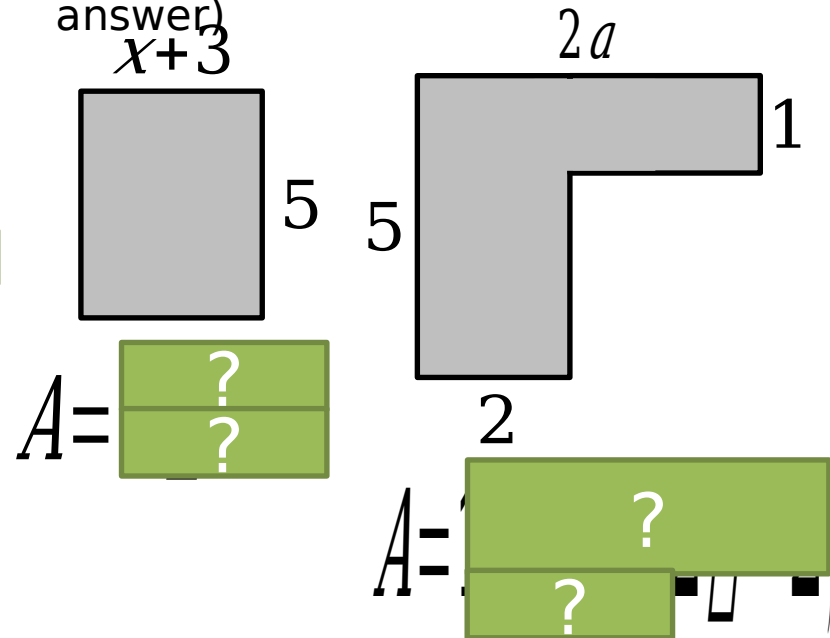
Bro Note: is also acceptable, but is preferable. Can you think why?

Exercises

2 Expand and simplify the following:



3 Find the area and perimeter of the following (expand and simplify your answer)



4 [IMC 2004 Q22] In a maths exam with questions, you score marks for a correct answer to each of the first questions and marks for a correct answer to each of the remaining questions. What is the maximum possible score?

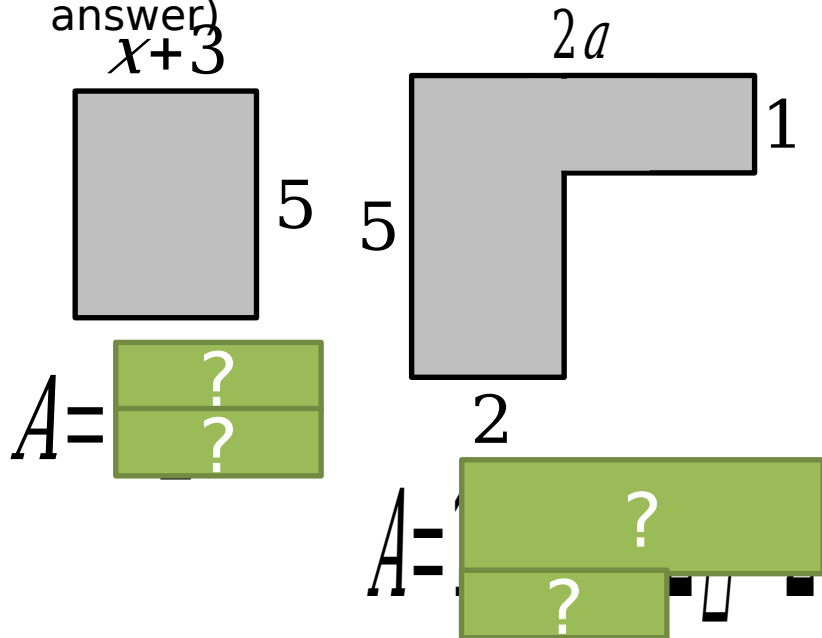
A B
C D
E

Solution: A



Exercises

- 3 Find the area and perimeter of the following (expand and simplify your answer)



- 4 [IMC 2004 Q22] In a maths exam with questions, you score marks for a correct answer to each of the first questions and marks for a correct answer to each of the remaining questions. What is the maximum possible score?

A B
C D
E

Solution: A

$\begin{bmatrix} ? \end{bmatrix}$